25 June 1958

Professor E. Toenniessen
Friedr. Naumannstr. 15
Kassel
GERMANY

Dear Profess or Toennissen:

Thank you very kindly for your letter of June 7, and for the enclosed mss. and reprints.

Unfortunately, I am making preparations for extensive travel for the summer, and it would be very difficult for me to give your ms. the attention it deserves, especially as my reading of German is somewhat more-time-consuming than in English. I will be looking forward to reading the reprints of your earlier papers, as I have a special interest in earlier thinking about the genetics of bacteria.

You refer to the possibility of transplanting the gene complex of capsulated to non-capsulated bacteria. This is, of course, the substance of the original work on the 'pneumococcus transformation' by Griffith, followed by the more extensive studies of Hotchkiss, Ephrussi-Taylor and others. There is also one claim for the same phenomen in K. pneumoniae by Ciantini (1944, Boll. ist. sieroter, Milan, 23, 47) but I must confess to being rather sceptical of the details. Balows et al. (1955, Jour. Bacteriol., 69, 139, "Attempts to demonstrate type transformation with K. pneumoniae") had completely negativeresults but they did not take advantage of the most modern methods. I have no doubt whatever that the systematic application of current techniques to this group of bacteria would generate the same successes as have been achieved with the related genera of Escherichia and Salmonella. Together with your ms., which I am returning under separate cover you will find a recent review that touches upon these questions. Like yourself, I originally thought that phenomena like the pneumococcus transformation spoke for cytoplasmic factors, but have been obliged to change my view in the face of later evidence.

At the present time, the most convincing examples of cytoplasmic induction are to be found in yeast, with respect to the respiratory factors which can be removed by treatment with acriflavine and restored by cytogamy with normal cells. In bacteria the only nearly convincing examples are the factors controlling male competence and colicin synthesis in E. coli.

May I suggest that you communicate with your compatriot, Dr. Richard Kaplan , Mikrobiologisches Institut der Universität Frankfurt a.M., who is one of the most active German workers on bacterial genetics at the present time. I should think that either the Ztschr. f. Vererbungslehre or the Zbl. Bakt. would be appropriate vehicles for your remarks, but I venture to suggest that they might be fortified by a correlation of your work with what has been done on the pneumococcus.

Yours cordially,

Joshua Lederberg
Professor of Medical Genetics

TOENNIESSEN, E.